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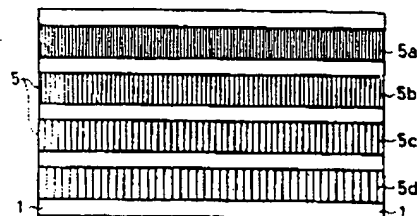
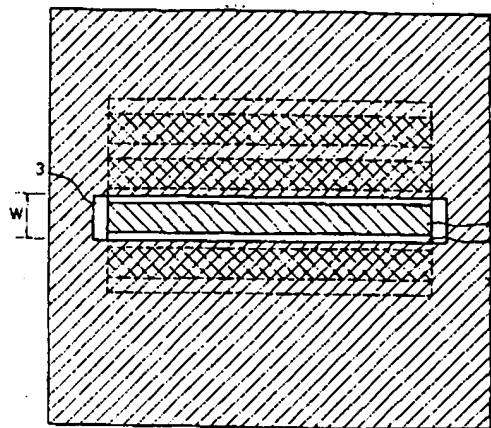
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APPLICANT : AGENCY OF IND SCIENCE &
TECHNOL;

INVENTOR : UEMATSU YUTAKA;

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TITLE : MANUFACTURE OF INTEGRATED
DIFFRACTION GRATING



ABSTRACT : PURPOSE: To determine the position of a diffraction grating with a desired period accurately by forming the diffraction grating on striped photoresist, and moving a selective exposure mask and exposing the photoresist.

CONSTITUTION: A substrate 1 is coated with positive type photoresist 1 and stripes 2 are formed. The substrate 1 is covered with the selective exposure mask 4 with an exposure window 3 and specific stripes 2 are exposed through the exposure window 3 and exposed to a diffraction grating pattern through interference exposure. Then, the set period of an interference exposure system is varied and the mask 4 is moved to other stripes 2 to perform interference exposure. This operation is repeated to expose all stripes 2; and the substrate 1 is dipped in a specific developer and all stripes 2 are developed. Then, the resulting pattern 5 is used as a mask to perform selective etching, thus integrating and forming plural diffraction gratings with different periods on the same substrate 1. Consequently, directions and positions of postprocessing patterns for the diffraction gratings are made coincident accurately.

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